

# Climate is 'Pretty Healthy'

Employees describe Sandia solemnly as "an R&D Laboratory" or frivolously as "a paper factory." Certainly it's true that we're more a think tank than a manufacturing plant: ideas — well designed, rigorously tested solutions to challenging technical problems — are our most important product.

So much for prologue. The basic theme is that ideas means communication — internal communication plays a key role in our mission. Our success in that mission depends largely on our ability to communicate with each other — up, down, and sideways.

How well do we communicate? That's the question top management asked last year. To answer it, Hank Willis, Director of Information Services 3100, brought in Stanley Peterfreund, a nationally recognized consultant who specializes in assessing corporate communication climate. He and others on his staff at Peterfreund Associates, Inc., have served as consultants to management (including that of several AT&T entities) in studying employee and public attitudes for more than 30 years.

Peterfreund gathered the data via a survey  
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PETERFREUND SURVEY of Sandia's communication climate resulted in 42 pages, like those above, of data. And the essential finding is that communication at the Labs is pretty healthy.



IT GOES UP — AND DOWN — Hugh Church of Applied Atmospheric Research Division 6324 prepares to release a prototype of the Adjustable Buoyancy Balloon Tracer. The division is developing the balloon to help scientists track air flow over a thousand miles or more, gathering data on how atmospheric motion affects acid rain and other forms of long range air pollution.

## LAB NEWS

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Where the Air Goes  
When the Wind Blows

# Smart Balloon Tracks Parcels of Air

When the wind blows, Albuquerque's "brown cloud" disappears. Most of us would guess that most of it travels due east, eventually dispersing in the empty skies over the empty landscape of west Texas. That guess is generally correct.

But scientists researching acid rain and other forms of long-range air pollution need to know more precisely where the air goes when the wind blows. That task is not easy, even though discrete masses of air — called parcels — hold together quite well over long distances.

"Air moves in different directions at different altitudes," says Bernard Zak, supervisor of Applied Atmospheric Research Division 6324. "A balloon launched into an air parcel but unable to follow the vertical motion of the parcel can be as much as 1200 kilometres distant from the parcel after 24 hours. If the parcel of air you want to track changes altitude, a fixed-altitude balloon can't tell you where it goes."

It makes sense to talk about "parcels of air" because air flow aloft is nearly isentropic — little energy enters or leaves a given volume of air — so under atmospheric

conditions parcels retain their identity for long periods.

That's why clouds usually blow across the sky as clouds rather than dispersing rapidly into the surrounding atmosphere. Clouds are simply humid parcels of air with some of the humidity having condensed into mist.

Just as clouds carry moisture, other parcels of air transport pollutants, often over hundreds of miles (see related story). Such parcels of air may be very large. At any given time, the size of Albuquerque's brown cloud may be as large as the city limits and moving in a mass — a parcel — with the prevailing wind.

Bernie's project team has designed and tested a prototype of an Adjustable Buoyancy Balloon Tracer, a relatively inexpensive device that follows both the horizontal and vertical motion of the air around it — keeping the balloon within the same parcel of air throughout its flight.

"The mechanical means for adjusting the buoyancy of a balloon were first sug-

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# Antojitos

**Engineering at the Salad Bar** You have chosen the salad bar because you want to lose weight, eat lots of roughage, and just generally be healthy, youthful, and with it. But you don't want to starve. The bowl looks awfully small. That's because it's awfully small. Pay-by-the-bowl salad bars are money-makers. Cutting the lettuce big enough ensures that the average customer buys a lot of air for his or her money -- and air is more cheaply procured than, say, chopped cauliflower, mushrooms, or canned chiles that might otherwise find their way into your bowl. So the research challenge is: How much salad can be layered into a 12-ounce bowl?

Start by glopping the highest-density ingredient offered -- probably potato salad or cole slaw (check by sticking your finger into it) -- against one side of your bowl. Build it up to the rim across one-third to one-half of the bowl. Now go to the lettuce and jam some into the empty pocket defined by the potato salad or cole slaw. At this point, apply the first layer of dressing (you want plenty of dressing, don't you?) to the lettuce. If you wait to put the dressing on last, as most tyro salad bar eaters do, you'll certainly end up with more dressing on your tray (or your hands) than on your salad. Put some on now so it can run down into the bottom of the bowl, thoroughly saturating everything.

Next arrange some cherry tomatoes around the lettuce-crammed part of the bowl and fill in to the middle with whatever loose goodies you want -- broccoli, three-bean salad, other assorted rabbit food. Now for engineering artistry. Take some carrot sticks or pickles (alternate them, if you like) and stick them pointy-end down into the potato salad and/or coleslaw. This constructs an edible fence that allows up to two inches of vertical piling above the edge of the bowl. More lettuce may go here, or you might wish to place cut fruit or other exotics in this space.

Now apply the final layer of dressing. Use the thickest, creamiest, goopiest stuff available. It's important as a mortar for the final stages of the construction. If you must, carefully pull out every other carrot stick or pickle. This will leave little holes into which the runoff dressing may drain before it can ooze over the side and mess up your tray -- always an embarrassment at the check-out line. Carefully insert croutons, bacon bits, sunflower seeds, raisins, shredded eggs, and grated cheese into the dressing. Don't just dust the pile with these items; you'll certainly lose more over the side than will adhere to even the best, cholesterol-laden dressing. That's it. All that remains is to look like a conscientious dieter as you struggle up to the register with your engorged salad bowl and glass of water or diet soda. If you can't manage to look like a dieter, you can always pose as a weight lifter. ●Scott Sanders



KEEPING THE DIRECTORATE TROPHY for another year will be Dan Hartley (8300) who carried it for good luck on his "stroll" along the race route. At right is Walter Bauer (8340).

## Livermore Take Note

Sandia Livermore just graduated its second Machinist Training Program employee, Sandra Bowers (8184). New people are hired as machinist trainees after they have earned an AA degree in machine tool technology. Then they go through 36 months of apprenticeship before receiving the Certificate of Completion.

## Fun & Games

**Bowling** — Sandia's bowling league wrapped up its 1985 season with the El Torro Poo-Poo team capturing first place. Team members were Wells Fargo Guard Force members Jerry Creager and wife Terri, Pam James, Gil Sandoval, and Dave Dougherty, plus Adam Sandoval (8184).

Second place team was Tuff Stuff composed of Shirley Carson (8236), her husband John, Don Knaple (8273), Paul Dominguez (8161), his wife Vanette, Bill Baer, and Ed Washburn.

High scratch series went to Kit Marino (8184) with a 586, and Eric Adolphson (son of Don, 8441) with 772. High scratch game winner was Anna Isham (8022) with a 229, and Steve Warn of Wells Fargo with a 262.

High handicap game winner was Terri Creager with 283, and Gil Sandoval with 291. First place sweeper awards were given to Carol Knapp (8236) with 618, and Adam Sandoval with 692.

## LAB NEWS

Published Fortnightly on Fridays

### SANDIA NATIONAL LABORATORIES

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## Congratulations

Jim and Marilyn Diaz (8250), a daughter, Kaycie Jean, born June 4.



RIDING IN THE OFFICIAL Livermore Rodeo Association convertible in the annual Rodeo Parade this year were representatives of the two national laboratories, recognized for their interest in supporting community events over the years. From left, LLNL Associate Director Jack Kahn, Ruth Claassen, and husband Dick, vice president of Sandia Livermore. The 180-unit parade down Second Street kicked off two days of rodeo events at the Robertson Park stadium.



# SANDIA LIVERMORE NEWS

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JUNE 21, 1985

AND THEY'RE OFF . . . as Dick Claassen (8000) sounds the gun for start of the 1.2 mile run up "A" Street.

## Reitz Sets Record

# 8300 Takes Directorate Challenge

Despite a cool and windy May 31, the second annual Sandia Livermore Directorate Challenge Race saw 159 participants and one new course record.

Jim Reitz (8176), running in the Men Over 40 category, ran the 1.2-mile course in 5:35, topping the old mark of 5:50 set by Dale Boehme last year. Other first place runners this year were Sharon Frazier (8347) in the Women Over 40 class with a 7:33 time, Karen Sheaffer (8235) in the Women Under 40 group with an 8:13, and Clement Chiang (8475) in the Men Under 40 category with a 5:52.

Dan Hartley's 8300 directorate captured the traveling trophy for the second year for having the most runners/walkers — 55. Dan himself was the only director participating in the event this year — opting to walk instead of run as he did in 1984.

There were two group efforts to liven the competition this year. The Purchasing Division, led by supervisor Frank Duggin (8264) and department manager Paul Brewer (8260), competed as a "Purch-a-Pede," and the secretaries in 8400 under the direction of Arline Harrell (8400) wore matching T-shirts emblazoned with

"Rix Chix" and ran as a team. (Last year's 8200 cheering squad, "Arlyn's Darlins," was nowhere to be seen this time.)

The 8200 directorate did come in second place overall with 48 people participating; 8400 was next with 28.

Other top finishers by class were: (Women Under 40) Sheryl Johnson (8300) and Mary Clare Stoddard (8471) tied at 8:14, Rene Bierbaum fourth with 9:15 and Joan Funkhouser fifth at 10:31; (Women Over 40) Carole Price (8340) running at 15:46, and the 8264 Purch-a-Pede third with 16:33; (Men over 40) Bill Wilson (8230) with an even 6 minutes took second, John Liebenberg (8132) third at 6:10, Bob Green (8362) fourth with a 6:28, and Dan Dawson (8473) fifth at 6:44; (Men Under 40) Glen Kubiak (8343) second with a 6:02, Dick Steeper (8473) third at 6:08, Bob Lucht (8362) fourth at 6:49, and Paul Lari (8272) fifth with a 6:51 time. There was also a ranking of winners using an adjusted time based on their age differences.

The SNLL Recreation Committee sponsored the event; John Lippold (8312) served as race coordinator again this year.



TOP WINNERS POSE with trophies: Front left Sharon Frazier (8347) and Karen Sheaffer (8235). In back at left Jim Reitz (8176) and Clement Chiang (8475).



RICK WAYNE'S directorate 8400 women donned matching T-shirts with the slogan "Rix Chix" on the back, roped together in a centipede fashion. From left are Sheila Akins (8474), Sandy Moore (8430), Deborah Linnell (8471), Terry Schoeppe (8474), Chari Belon (8473), Lorraine Eldridge (8474), and Arline Harrell (8400).



PURCH-A-PEDE RUNNERS kept in step behind 8260 department manager Paul Brewer, left front, and 8264 division supervisor Frank Duggin (with antennae hat).

## Communications Survey

vey, designed specifically for Sandians by an *ad hoc* Sandia task force and tested on more than 100 employees. The final version of the survey was mailed to a random sample of employees at all levels. Returns were good: nearly 600 Sandians — management (all levels of supervision), staff, and graded, but not represented employees — took part in the survey. That's enough to make the results statistically valid.

And what was the result? Actually, we're pretty healthy, at least when compared to most other organizations. We have some strengths and some weaknesses, of course, but more on that later.

The survey asked for brief answers, rather than checking a multiple choice response, to several questions. For example, asked to name Sandia's most distinctive positive qualities, 96 percent wrote responses. Of those, 39 percent named good employee benefits; 27 percent listed interesting, challenging work, varied duties; 26 percent said good working environment, friendly co-workers, open communication; and 23 percent mentioned high quality, technically competent employees. (It's reassuring that most Sandia managers gave the latter response.)

Most people also named what they believed Sandia's least attractive characteristics. Yes, the parking situation was right up there — physical surroundings (space, parking, and lighting) were criticized by 17 percent. But the most often-named negative characteristics were (18 percent) "unfair treatment of employee groups," and "criticisms of the merit review system." Fourteen percent criticized the bureaucracy as too structured, layered, impersonal; somewhat ironically, this was management's most often cited criticism (25 percent). "Too little opportunity for advancement, mobility" was named by 13 percent of the respondents in this category. Only seven percent wrote in communication as a problem.

On a more positive note, 86 percent of the respondents indicated (in a multiple choice question) that they do indeed have the personal ability to do their jobs, and 60 percent say that circumstances allow them to do that job. According to Peterfreund, that 26 percent difference is a typical gap.

The most common barriers preventing people from doing their jobs more effectively are these: inadequate support, limited staffing, lack of cooperation from others (18 percent); the bureaucracy, administrative procedures, paper work (16 percent); not enough time, too many demands and interruptions (15 percent); and problems with management (12 percent).

Nearly half (43 percent) of those who responded feel that communication at Sandia has not changed over the past two or three years. Of those who feel there's been a change, more feel it's been for the better than for the worse (28 percent to 20 percent). According to Peterfreund, that's a "remarkably favorable" finding.

But two-thirds felt that improving com-

### Communication Survey

## Highlights of Results

Internal communication is seen neither as one of Sandia's greatest problems nor as one of its principal strengths. Even so, more than two-thirds feel it's of substantial or critical importance to improve employee communication, especially downward communication.

Sandians don't feel the communication climate encourages people to say what's really on their minds, and only 25 percent of non-management and 35 percent of management people agree that "communication from management is straightforward and honest."

When information seems to be held "close to the vest," it's more often seen as a function of individual personalities than of the security system.

For the most part, both formal media and face-to-face communication are seen to work pretty well. But there are some issues that Peterfreund, the survey consultant, calls "somewhat of a problem":

- Lack of effective communication and coordination between departments.
- Inadequate explanations when changes are made.

- Being held up in one's work because information needed to do the job comes late.

- Difficulties in coordinating information needed from various sources at the same time.

- Being asked to supply so much information to others that "I lack the time to do my own work" (especially true of managers).

And there are some qualities to feel good about:

- A strongly positive view of the professionalism of Sandia.

- Most people prefer the assignments they're in to others at their current level.

- Extremely positive attitudes about the work climate, job freedom, and the encouragement of personal judgment and initiative.

- The expectations most people had when they hired on at Sandia have generally been met or exceeded. Doing challenging and interesting work, job security, and the opportunity for personal growth lead the list.

munication at the Labs is either of substantial or critical importance. Asked to name the improvements needed, 16 percent said that management should show more interest in and respect for employees; 13 percent saw a need for better downward communication (information about policies, future plans, priorities, goals); 11 percent wanted job responsibilities clarified, and feedback on job performance and the merit rating system; and 10 percent asked for clearer, more honest communication that provides a rationale for decisions.

Asked what kind of communication — from above, from peers, or from below — presents the most problem, 46 percent said "from above." "From peers" and "from below" accounted for 26 and 25 percent respectively.

Whatever the direction of the communication, lack of thoroughness (is all the information you need there?) was the most often-named problem. The quantity of the information, its timeliness, its clarity, its credibility, and its relevance were all seen as lesser problems. (Interestingly, the biggest gap in the "from above" category was that between Large Staff and department managers. In presenting this finding to his fellow directors, Hank quoted the famous line from *Pogo*, "We have met the enemy and they are us.")

As might be expected, communication is perceived as most open with those at the same level or the next level up (one's immediate supervisor) or down. It's seen as least open with management above the immediate supervisor and with top executives.

Although water fountain comments about drowning in a sea of paper are common, the survey found that most Sandians are relatively satisfied with the total amount of information coming to them. Under the "not enough" exceptions, two (progress reports on the "state of Sandia"

and information about future project opportunities) are institutional; two others (feedback on my personal performance and on my group's performance) are basically interpersonal.

Similarly, most non-management Sandians feel the time they spend in meetings of all types is about right (managers feel they spend too much time in meetings). But not enough meeting time is with one's work group and supervisor, with one's supervisor on a one-to-one basis, with Sandia professionals in one's technical field, or with such professionals away from Sandia.

One of the most disturbing findings for management and for others in the communication business (LAB NEWS included) is that Sandians feel least well informed about the *whys* behind the decisions made. Other often-cited responses were a lack of information about our long-range strategic plans (where Sandia is going as an organization) and our prospects for the future. As Peterfreund said when he spoke at a department managers' conference in 1971, "Employees need to feel that they're 'in the know.'"

The two most useful sources of face-to-face information are an employee's immediate supervisor and other employees at the same level (both 74 percent). Next come subordinates, staff meetings, informal networks, higher management, the grapevine, and, finally, colleagues outside Sandia.

The most useful sources of "media" information are the Weekly Bulletin (72 percent), the LAB NEWS (66 percent; hurrah!), and the library (62 percent). Other Sandia bulletins (safety, security, etc.) also ranked high (58 percent).

From a list of potential communication problems, the ones most often chosen were "lack of effective cooperation, coordination between departments," "when changes are

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Continued . . .

## Survey

made, they are inadequately explained to us," "I'm often held up in my work because the info I need comes late," and "difficulty in coordinating info from various sources at same time." But none of these was felt to be a "very serious" problem.

Sandians generally accept computerization and feel that computers contribute to productivity, but several users do feel that Sandia's information systems in general (including paper varieties) need "substantial improvement."

Some key findings about the overall communication climate are that two-thirds agree with the statement "I can disagree or voice a conflicting point of view to my immediate supervisor without fear that it will be held against me." That's good. Fifty-seven percent (78 percent of management, 54 percent of non-management) agree that "My immediate supervisor is interested in my ideas and suggestions about how the organization might function better." That's pretty good too.

But only a third of those responding agreed that "Communication is really open here; people say what's really on their minds." And only 25 percent of non-management (35 percent of management) agreed that "Communication from management is straightforward and honest." That's not so good.

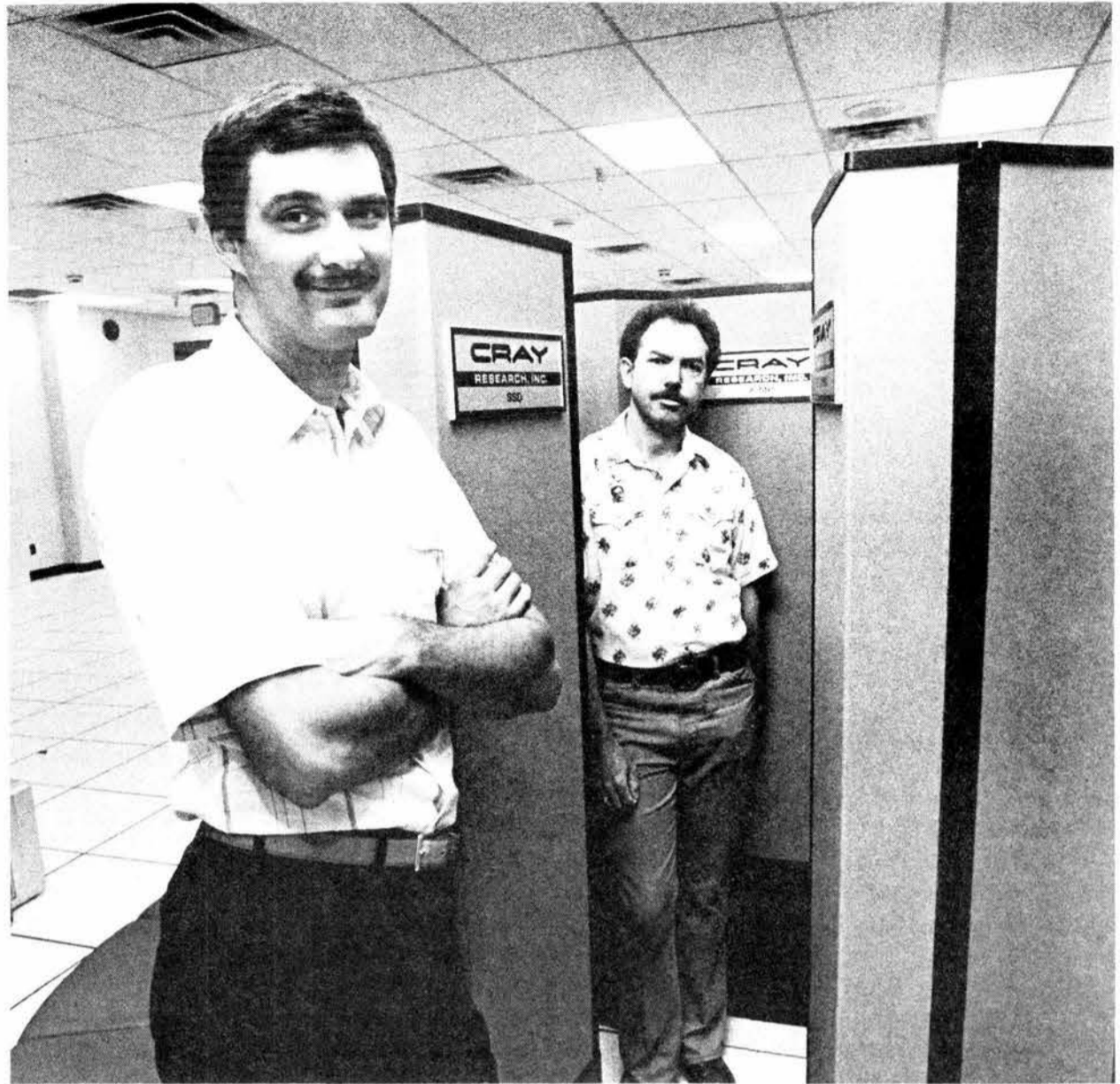
Nearly three-quarters feel that they are almost always able to get the information they need to do their jobs without much difficulty. And almost as many say that when they're given information from above, they feel free to pass it along to the people who work with or for them; and that immediate supervisors listen well when they (the respondents) have something to communicate.

At the same time though, fewer than half feel that, when they make suggestions about work, action is taken. And about a quarter feel that people at their level are afraid to pass bad news upward. Most employees feel that they don't have much opportunity to provide feedback on how well a change in programs or policies is working. Even more feel that lower-level employees don't have much opportunity to provide input before a change takes place.

Even so, most (60-65 percent) of the employees surveyed feel positive about most aspects of their jobs. One finding that George Dacey found disturbing is that only half the employees surveyed feel that their jobs utilize their talents, abilities, and skills to the fullest. "We want to be sure that people feel that they are being asked to fulfill their potential right up to their limit," he noted in his recent State of the Labs message (LAB NEWS, Feb. 15, 1985). "We want [Sandia] to be a Mt. Everest," not a "plush-lined rut."

Fulfilled or not, most employees (67 percent) are not interested in lateral moves. Moves up are another story — only 16 percent agree that a person who wishes to spend an entire career in technical positions can progress as well as one who wants to go into management.

Sandia gets high marks (77 to 80 percent agreement) for allowing its employees the



COMPUTERS get smaller and more powerful — witness the new CRAY X-MP/24 that went on line in Sandia's Scientific Computing Network last week. At left is Jerry Esch, supervisor of Scientific Operations Division 2631, with Frank Mason, supervisor of Scientific Computer Operating Systems Division 2641, responsible for the new supercomputer's operation and programming. Supporting the machine is a powerful new SSD (solid state storage device), a 32-million word (64-bits) memory device, and an array of 12 DD49 disk drives — very fast, very powerful with an 80 megabit per second transfer rate and a 1.2 gigabyte (billion) capacity in each drive. Now operating under the COS (Cray operating system, a batch-oriented operating system), the new X-MP will shortly be operable in the interactive mode as part of the CTSS (Cray time sharing system).

freedom to choose how to perform their tasks and achieve their objectives alone or in cooperation with others without undue interference from management.

Sandia also received high marks (77 percent agreement) for the quality of its scientific and technical work. Other high-ranking characteristics are: top executives who are highly capable (63 percent), community involvement (63 percent), good cooperation and teamwork among its technical/scientific organizations (but not so good between the technical and administrative communities; 62 and 49 percent respectively), strong technical leadership at all levels (60 percent), and social responsibility (59 percent). The lowest mark came on "strong personnel management skills at all levels" (38 percent).

Focusing specifically on top executives, the survey disclosed that "receptivity to new ideas" came out just above "willingness to acknowledge and deal with operational problems" (59 and 58 percent respectively). That's doing "moderately well," according to Peterfreund.

At the bottom of that 16-item scale were "keeping internal bureaucracy in check," "showing concern for the impact of top-level decisions on individual employees," and "infusing Sandians with a sense of excitement and 'future'" with 33, 38, and 39 percent agreement respectively.

Finally, most employees surveyed see little change in Sandia as an employer over

the last three years. The exception is support services — they're perceived as declining.



Here are some current volunteer opportunities for employees, retirees, and family members. If you would like more information, call Karen Shane (4-3268).

**ST. MARK'S IN THE THE VALLEY DAY SCHOOL** is a United Way agency for preschool children from all income and ethnic backgrounds. The school needs a board member and a volunteer to assist in the classroom.

**NEW MEXICO ARTS AND CRAFTS FAIR** needs volunteers to help out for a couple of hours at the fairgrounds Thursday through Sunday, June 27-30.

**ALBUQUERQUE BOYS CLUB** is looking for a board member from Sandia whose prime responsibility will be fundraising.

# Take Note

NM Senior Senator Pete Domenici is this year's honoree at the annual dinner/dance to benefit the National Jewish Hospital/National Asthma Center. The event is July 13 at 6:30 p.m. at the Convention Center. Tickets are \$100 each, tax deductible. For more information or for reservations to sit at a Sandia table, please contact Tom Cook (20), executive committee member, on 4-4674.

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Eighteen members of the Finnish Physical Society visited Sandia May 30 as part of their society's "Scientific America Tour '85." After a discussion of Sandia's solid state physics and photovoltaics research programs, the group toured the Photovoltaics Test Facilities.

Twelve Ecuadorian participants in the UNM Latin American Programs in Education also visited Sandia recently. Their June 8 visit included a discussion on solar energy research at Sandia and tours of both the CRTF and VAWT.

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Got a divan to donate? Hogares, Inc. is a private, non-profit agency that works with troubled adolescents and their families to attempt to resolve problems between teenagers and their parents. When it is not possible for teenagers to continue to live with their parents, Hogares places them in one of its 12 professionally staffed homes. Each home is developed and staffed to work with seven to 10 young people whose problems are similar. The agency is always in need of good living room and bedroom furniture, large and small appliances, and all kinds of household items. Anyone who has any items to donate may call Nestor Baca at Hogares, 842-8275.

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Los Alamos National Laboratory will host a Frontiers of Quantum Monte Carlo conference on Sept. 3-6. For further information, contact the QMC Conference, Mail-stop B-258, LANL, Los Alamos, NM 87545.

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The American Nuclear Society, in cooperation with the DOE, the Canadian Nuclear Society, the European Nuclear Society, and the Atomic Energy Society of Japan, will sponsor an international topical meeting, "Computer Applications for

Nuclear Power Plant Operation and Control" Sept. 8-12 in Pasco, Wash.

Combining the two major fields of computer development and nuclear power, the meeting is the first of its kind. More than 120 papers from 12 countries will be read, with presenters from utilities, scientific laboratories, regulators, universities, and private industry.

For more information, write ANS 1985 Topical Meeting, c/o Linda Page, PO Box 2483, Pasco, WA 99302.

A special pre-conference seminar on artificial intelligence will be held on Sept. 8. This conference is aimed at managers, engineers, and researchers. For further information, write Devin Smith, Westinghouse Hanford Company, PO Box 1970, W/A-135, Richland, WA 99352 or phone (509) 376-5065.

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The American Lung Association of NM is sponsoring summer camps in July and August for asthmatic children and teenagers. The overnight camping experiences emphasize activities geared to asthmatics. The camp provides 24-hour medical care by doctors and nurses trained in pediatric asthma treatment.

"Camp Superkids" is scheduled July 28-Aug. 3 at Camp Stoney near Santa Fe and is open to any nine through twelve-year-old child with asthma. "Camp Superkids" will be held Aug. 11-17 at Camp Shaver in the Jemez Mountains and is open to any asthmatic teenager, 13-16. Activities at both camps will include swimming, hiking, archery, sports, cookouts, campfires, and arts and crafts, as well as classes on asthma and how to deal with it. In addition, "Camp Superkids" will provide fishing, canoeing, and visits to the warm springs and fish hatcheries in the area.

Space is limited in both programs. Parents wishing to enroll their asthmatic children should write the American Lung Association at 216 Truman NE, 87108, or call 265-0732.

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The NM Arts & Crafts Fair will present two print exhibits from a private collection, entitled "Five Centuries of Master Prints" and "From Taos to Tamarind: 140 Years of Printmaking in New Mexico." The former includes prints from the old masters, as well as 19th and 20th century artists. The latter surveys the history of prints in NM from the 1840's to the 1980's. Never viewed publicly before, the exhibits will open Preview Fiesta Night, June 27, at the NM State Fair Fine Arts Gallery and run through the month of July.

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Floyd Elder (7818) and Don Grab (2545) will participate in a Radio Amateur Field Day, June 22-23, at Coronado State Park. The purpose of the weekend's activities is to test emergency procedures and equipment.

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Faith Perry (3523) has done it again. Adding to her success at last year's NM Arts & Crafts Fair, Faith won two awards at the "Celebration of Watercolor" exhibit, which runs through June 29 at the Albuquerque



RECENTLY COMPLETING the Sandia five-year apprenticeship program are (front row from left) Bob Carlton, Clarence Esquibel, and Lane Harwell. In the second row are Doug Abrams and Daryl Reckaway. All of the men completed the program from a year to six months early and are now journeyman machinists. Until reassignment, all are in Machinist Apprentice Section 7485-2. The apprenticeship program includes 10,000 hours of on-the-job training and 1000 hours of classroom instruction.

Public Library, 501 Copper NW. The exhibit is sponsored by the NM Watercolor Society and is open during normal library hours. Of her two paintings in the juried show, one, "Grasshopper Delight," won an honorable mention and a purchase award. Faith does Oriental brush painting and watercolor in the traditional freestyle style of Chinese painting.

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School's been out a month. Is your child bored by now? Would you like to expand your child's experiences without having to take off work? Then you may be interested in one of three summer day camps sponsored by the YWCA.

Blue Triangle Camp is located on 75 acres in the Manzano Mountains. Each two-week session consists of a variety of experiences such as arts and crafts, hiking, sports and games, environmental awareness, archery, outdoor cooking, and camp tradition and songs. The camp provides daily bus transportation from nine city-wide locations. The special camp for the physically impaired will be Aug. 12-16.

Summer Venture, a fine arts day camp, will feature two-week, theme-inspired sessions held at the Yucca Annex of Sandia High School. Themes will focus on fantasy, past and future events, cartoon characters, monsters, mythology, and world cultures. Children will experience all facets of theater, dance, art, music, sports, and games. Each session culminates in a fiesta.

For the sports minded, Sunshine Sports Camp provides mini-clinics with daily practice in a single-sport rotation during each two week session: soccer, volleyball, softball, and basketball. Sessions are held at Menaul School. A Friday feature is "The Big Game," with parents and friends invited.

Early drop off and late afternoon pick up of children are available for all three

camp. For more information phone Deb at 884-0291.

Other unusual day camps include "Intergenerational Adventures," as well as a Labor Day camp for single parents and their children. The YWCA joins the Highland and Palo Duro Senior Citizens Centers to bring a series of activities for 9-12 year olds and seniors. Activities include "Spiking with the Palo Duro Spikers," June 25, and "A Safari to the Zoo," June 25. The Labor Day camp will be Aug. 31-Sept. 2. Phone 884-0291 for more information.

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Gloria Chavez Millard (3314) was recently appointed to the governor's Radiation Technical Advisory Council (R-TEC). Composed of seven members from around the state, R-TEC advises the state Environmental Improvement Division and the Environmental Board on matters related to radiation and its effect on the environment. Gloria was selected because of her expertise in environmental health physics. Her term ends in May 1990.

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A group called Time Out for Singles meets Friday, June 28, at 7 p.m. at the First Unitarian Church, Carlisle and Comanche. All singles are invited. The program is Middle Eastern entertainment and food. Cost is \$5 in advance, \$6 at the door. Call Jon Weiss (7116), 6-2461, for more information.

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A collection of drawings by Jim Walston (3155) will be on display in the elevator foyer of Bldg. 802 through July 12. The exhibit, primarily carbon pencil drawings, is representative of Jim's work as a technical artist for Sandia and his New Mexico landscape and people drawings done out-of-hours. Jim plans an exhibit at the upcoming NM Arts & Crafts Fair.

# Events Calendar

Through June — "Romeo and Juliet," Thurs., Fri., & Sat. at 8 p.m.; Sun. at 6 p.m., Vortex Theatre, 247-8600.

June 21 — Dukes of Dixieland in concert with the NM Symphony Orchestra, at 8:15 p.m., Kiva Auditorium, 842-8565.

June 22 — NM Museum of Natural History: All day showings of natural history films and preview of the museum's new murals, 9 a.m. - 6 p.m., 1801 Mountain Rd. NW, 841-8837.

June 22-23 — Music and Art in the Courtyard, featuring a classical guitarist, a goldsmith, and NM woodcarvers; 12 noon to 5 p.m., Plaza Escalante Gallery Courtyard, 412 Central SE.

June 23 — Movietime at the KiMo — Movies by Great Directors, "Roshoman," Japanese, Akira Kurosawa (1951), 7 p.m., KiMo.

June 28 — Chamber Orchestra of Albuquerque, "Music from France," 8:15 p.m., Albuquerque Little Theatre, 247-0262.

June 28-30 — 24th Annual NM Arts and Crafts Fair, 240 artists and craftsmen, 10 a.m. - 10 p.m. Fri. & Sat., 10 a.m. - 6 p.m., Sun., State Fairgrounds.

June 28-30 — Albuquerque Ballet production: includes performances of "Les Sylphides," "Gaité Parisienne," "Le Corsaire," and "Pas de Trois," Fri. & Sat. at 7:30 p.m. Children's matinee 2 p.m. Sat. & Sun. with performances of "Peter and the Wolf" and "Carnival of the Animals," KiMo, 766-7816, 265-8150.

June 29 — Music at the Museums, concert featuring chamber music for strings and

winds, 3-5 p.m., Albuquerque Museum, 766-7392.

June 29-Aug. 25 — Santa Fe Opera: performances include "Orpheus and the Underworld," "Marriage of Figaro," "The English Cat," "Die Liebe der Danae," and "The Tempest." July performances are on Wed., Fri., & Sat. August performances, Mon. - Sat., 9 p.m., Santa Fe Opera.

June 30 — NM Mercedes Raffle: 999 tickets to be sold at \$100 each for a 1985 Mercedes-Benz 380 SL convertible. Benefits NM Symphony Orchestra. Tickets available at NMSO office or call 842-8565. Raffle at European Imports, 6400 San Mateo NE.

## Congratulations

Byron (3435) and Susan Gardner, a daughter, Erin Lee, June 3.

Peggy Wallace (152) and Jack Cole, married in Albuquerque, May 24.

Todd Owen (5343) and Patricia Jack, married in Albuquerque, May 18.

George (5231) and DeAnna Wagner, a daughter, Danielle ElisaJean, June 4.

Terry (7484) and Janice Smith, a son, Michael Thomas, June 8.

Nancy Hall (2523) and Jim Kadlec (812), married in Albuquerque, May 25.

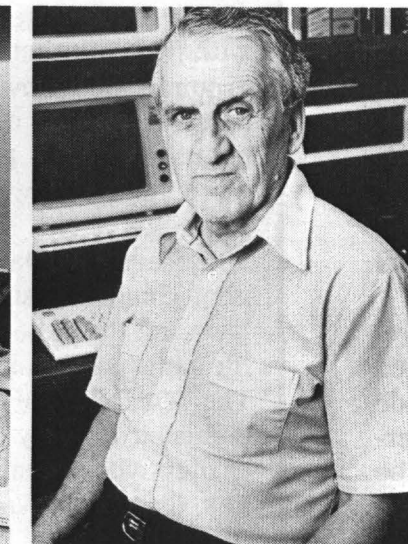
Colleen Keeler (7524) and Joe Clement (2144), married in Temperance, Mich., June 8.

Carol Jones (2814) and Sheldon Applegate (2542), married in Raleigh, N.C., June 15.

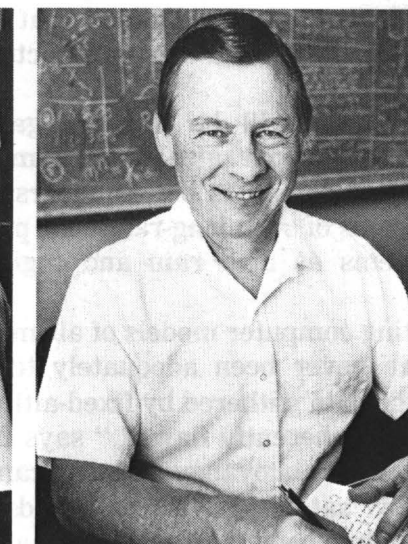
# Retiring



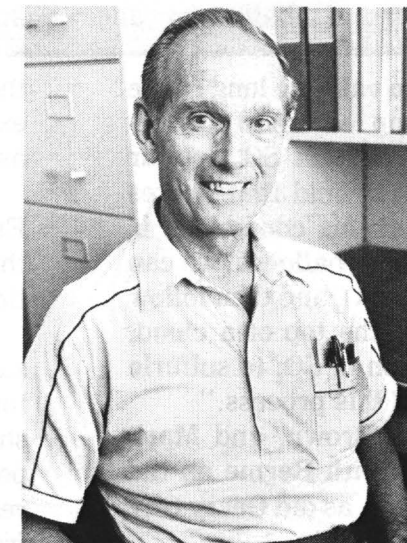
Jeanne Boyd (3151)



Fred Shoemaker (7132)



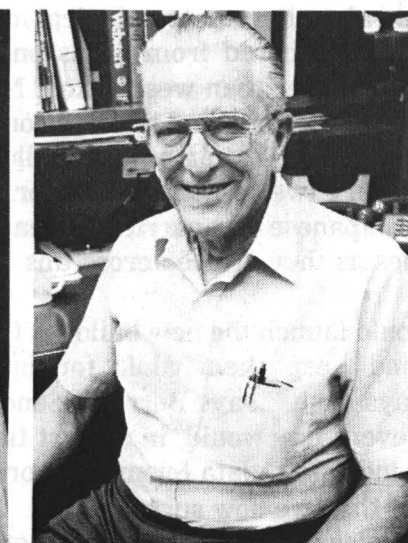
Joe Rivard (6420)



Ron Hayenga (2312)



Harold Gregory (5121)



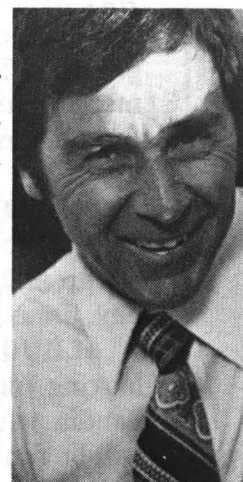
Fred Edwards (5313)

# Death

Bob Lassiter of Security Systems Implementation Division 5266 died June 9 after a lengthy illness. He was 48.

He had worked at the Labs since September 1962.

Survivors include his wife, Yvonne (2525), and two daughters.



## Smart Balloon

gested by Vin Lally of the National Center for Atmospheric Research (NCAR) back in 1967," says Bernie. "But the problem has been getting a lightweight microcomputer and power source to operate the mechanism on a balloon of small size."

The adjustable buoyancy balloon's gas bag has two compartments. One is filled with helium, the lift gas, and the other with air, the ballast. When the altitude control system senses a deviation from the mean vertical air flow, an onboard microcomputer directs a pump and valve system to pump air in or out of the ballast compartment, lowering or raising the balloon to follow the vertical movement of the parcel of air being tracked.

Bernie's team had several design goals for the prototype balloon.

- a minimum lifetime of three days
- a ceiling altitude of 6000 metres above sea level
- a ground system capable of tracking several tracers at once
- a cost low enough to allow several balloons to be released without having to recover all for re-use
- ability to telemeter (use radio communications) to send data on selected weather variables
- ability to follow even small changes in the vertical flow of air

In addition, the balloon will carry a radar reflector and transponder to allow the Federal Aviation Administration (FAA) to monitor its location relative to air traffic.

"The prototype demonstrated the feasibility of fielding a balloon that meets the goals," says Bernie. "We're in phase two now, putting together a balloon that can meet all the goals and be manufactured commercially."

The balloons will be used to gather accurate data about atmospheric movement, helping scientists better understand the mechanics of such long-range air pollution problems as acid rain and regional haze.

"Existing computer models of air movement have never been adequately tested because the data gathered by fixed-altitude balloons are inherently flawed," says Bernie. "Adjustable buoyancy balloons can be tracked by satellite over thousands of miles, sending back accurate data about long-range atmospheric movement."

The satellite-reporting ability of the balloons would also allow meteorological information to be gathered from areas on the globe even emptier than west Texas. Now, most atmospheric sounding information for the open-water Pacific comes from balloons launched every twelve hours at one or two points by Japanese car-carriers releasing radiosondes as they cruise across this vast area.

"We could launch the new balloons from Hawaii and keep them aloft for up to several days each," says Bernie. "Sending up a few every day would, in a short time, give us 'winds aloft' data for much more of the Pacific than we now survey."

"This is also a very exciting prospect for acid rain researchers," says Bernie. "In



IN THE GONDOLA OF DA VINCI II — Back in 1976, from the left are Preston Herrington (now supervisor of Sensor Systems Division 322, then project engineer for Da Vinci); Vera Simons, research balloonist and artist; Otis Imboden of the National Geographic Society, a co-sponsor of the project; and Bernie Zak.

### On a Not-So-Clear Day

## The Flight of Da Vinci II

If you think the Post Office had trouble tracing that package of fresh fruit you sent to Minneapolis last Christmas, imagine trying to trace a parcel of polluted air as it blows away with the wind from St. Louis.

Back in 1976, that's what Bernard Zak, now supervisor of Applied Atmospheric Research Division 6324, helped do as scientific director of Da Vinci II, a Sandia project that launched a piloted, nearly 15-stories high, helium-filled balloon to track a parcel of polluted air for 24 hours as it traveled east from St. Louis.

The air — and the balloon — came down near Griffin in southwest Indiana, just beyond the banks of the Wabash and north of Interstate 64. That's the entire width of Illinois east of St. Louis.

Said Bernie in the June 25, 1976 LAB NEWS, "Some conclusions can now be drawn. Under appropriate conditions, the highly polluted air that builds up over a city can be transported long distances at night with little dilution in a layer well above the ground. The following day, when the upper and lower air are again mixed, these pollutants affect people living one, two or more states away from the pollution sources."

Because the Da Vinci II was manned, the pilot could adjust the ballast, raising and lowering the balloon to keep it flying within the same parcel of air throughout the flight. The feasibility of the technique had been demonstrated by Da Vinci I two years earlier when a similar balloon flew from Las Cruces to Wagon Mound in northern New Mexico.

Co-pilot on Da Vinci I and II was Vera Simons, cited in the LAB NEWS of October 11, 1974 as a "research balloonist and

artist."

"Vera is a rather interesting character. She's a fairly well-known artist, and she loved to fly balloons," remembers Bernie. "The longer the flight, the more she loved it. Vera knew Rudy Engelmann who worked then for the Division of Biomedical and Environmental Research in the then Atomic Energy Commission. Rudy brought the project into being and was the on-board scientist for the Da Vinci flights."

The success of Da Vinci II dramatically demonstrated the value of tracing specific parcels of air. Air pollution could no longer be popularly regarded as only an urban problem — folks in Griffin got hard proof that they regularly breathe downstream (St. Louis-polluted) air.

Da Vinci III flew a month later from St. Louis to Moorehead, Kentucky, in the foothills of the Appalachians. But manned helium balloon flights are more romantic than they are practical for extended scientific investigation.

Nine years later in a political and research atmosphere changed by public concern about acid rain, Bernie supervises a Sandia project for the U.S. Environmental Protection Agency that bids to make unmanned, adjustable buoyancy balloons practical for tracing atmospheric movement (see related story).

The new balloons will substitute microprocessors and small, lightweight power sources for Da Vinci's three-ton gondola and four-person crew.

No one will be on board to sing "Up, Up, and Away." But the data the tracer balloons return may help explain the unromantic mechanics of acid rain and long-range air pollution.

addition to being able to validate long range transport models, we can learn how convective rain clouds help convert SO<sub>2</sub> (sulfur dioxide) into the sulfuric acid that makes rain acidic. The rate of this conversion is not well known. With these balloons, we can seed a parcel of air with SO<sub>2</sub> and then follow it up, through, and out the top of a cloud, observing the conversion of SO<sub>2</sub> to sulfuric acid that occurs during this process."

Hugh Church, Gary Brown, and Mark Ivey (all 6324) worked with Bernie on the prototype as co-designers, as did Gerry Gay (7525), and Lee Jensen (6256).

Ernie Litchfield from NCAR has joined

the project under contract. He brings the expertise of Vin Lally's NCAR group to assist Sandia's phase two effort.

The project is funded by the U.S. Environmental Protection Agency, in part through the National Acid Rain Precipitation Assessment Program.

"It's really been a gratifying project," says Bernie. "Usually there are nay-sayers for any project — people who say it can't or shouldn't be done. Not so on this one. Air pollution scientists' and meteorologists' reactions have been extremely favorable from the start. Their moral support has been encouraging."



FRAN STOHL (6254) broke the ribbon to win the women's 40-49 bracket 100-metre dash.



HANDOFF in the "fringe benefit relay" from Mary McWherter (1636) to Larry Walker (5322) keeps Sandia in the lead. Sandia's two teams took first and second place in this event.

## Sandia Wins Corporate Cup

With team members setting four meet records, Sandia took the 6th Annual Corporate Cup Division I competition June 7-9. Sandia racked up a total of 574 points for a runaway victory over KAFB, second with 509 points. LANL was third with 455. About 1300 participants, 42 teams in three divisions, competed in track and field events in the three-day meet.

John Kelly (6454) cleared the bar at 5'4" for a new meet record in the men's 40-plus high jump. John also took a first in the long jump event with a leap of 18'¼". Richard Cernosek (7555) cleared the bar at 5'8" for a first in his high jump category while Mary McWherter (1636) topped 5' for a first in the women's group.

Mary also led her relay team for a first in the "business lady" relay (each team member ran a 100-metre leg) for a meet record. Other team members were Kay Schoenefeld (6425), Julie Garcia (7263), and Lynn Cole (3545).

Another meet record was set by Sandia's team in the "equal opportunity relay" — each team member ran 400 metres. Mary McWherter, Jim Garsow (5311), Lynn Cole, and Mark Kimball (2112) carried the baton.

A meet record was established in the "fringe benefit relay" with team members Lynn Cole, Mary McWherter, Larry Walker (5222), Jim Garsow, Jon Yip (3141), and Tony Teague (3435) each running legs from 200 to 400 metres.

In individual competition a number of Sandians took the top place. Kay Schoenefeld took the women's 100-metre run in the 30-39 bracket while Fran Stohl (6254) took the 40-49 bracket in the same run.

Mark Kimball (2112) was first in the 800-metre dash while Sally Douglas (1846) took the women's crown in the same event.

Jim Schirber (1150) was first in the men's 50-plus 1500-metre run, and Kathie Hiebert-Dodd (315) was first in the women's 30-39 category.

Marty Fuentes (6221) tossed the shotput 44'1½" for a first in this event. Richard Cernosek was second with a toss of 40'9¾".



MARY McWHERTER goes over the bar at 5' to take the women's high jump event.

In other team events, Sandia took the executive relay. Sandia supervisors participating were Jim Shirber, Henry Dodd (6252), Dan Arvizu (6224), and Paul Hommert (6258).

Henry Dodd was head coach for the Sandia team; Richard Cernosek coached field events; and Larry Walker and Mary McWherter coached the sprinters. It was a very successful Corporate Cup effort. And there's one more success story to tell — Larry and Mary are getting married tomorrow.

Photos by John Shunny (ret.)



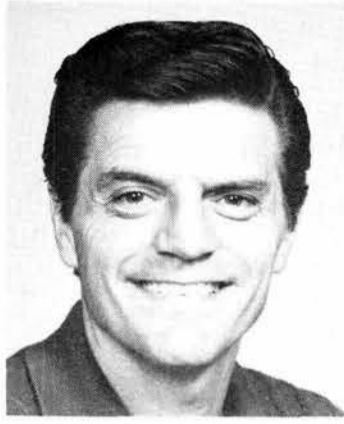
JULIE GARCIA (7263) sprints into the lead during the "fringe benefit relay."



KAY SCHOENEFFELD (6425) led the pack to take first place in the women's 100-metre dash. Second was Tina Tanaka (7112), left.



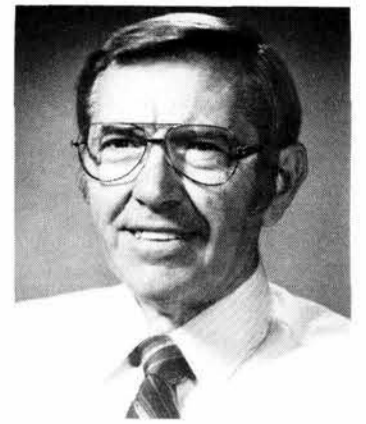
**MILEPOSTS**  
**LAB NEWS**  
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Jim Reitz (8176) 20



John Leeper (8432) 25



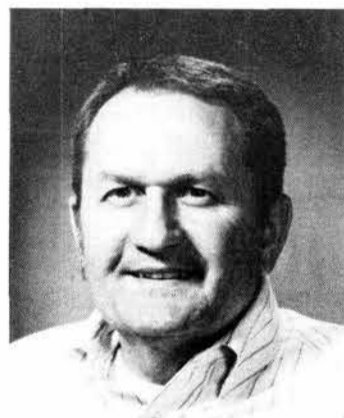
Leroy Brace (2526) 25



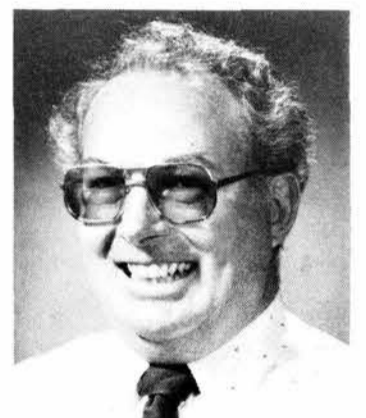
Bill Myre (5200) 35



Jim Hopwood (8186) 25



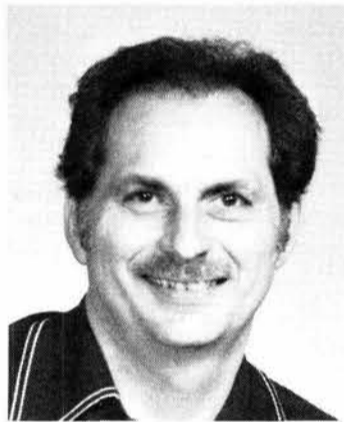
Norb Siska (2364) 25



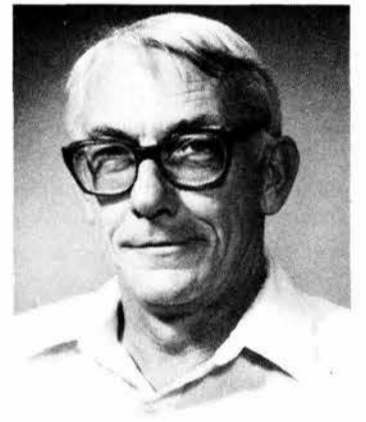
Leo Scully (6311) 25



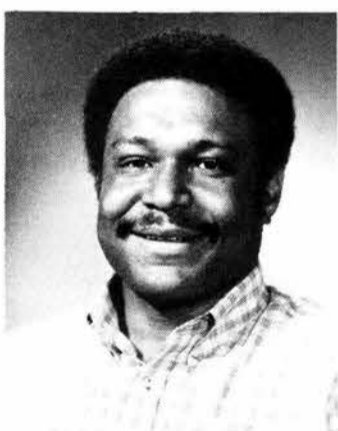
Bill Hoover (8442) 15



Jim Dremalas (8442) 25



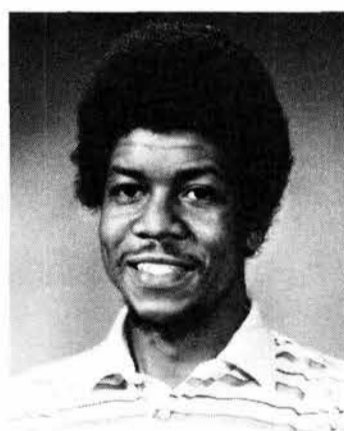
Bill Sullivan (2566) 25



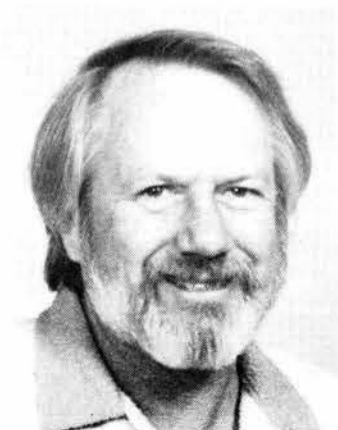
Art Hardeman (2616) 20



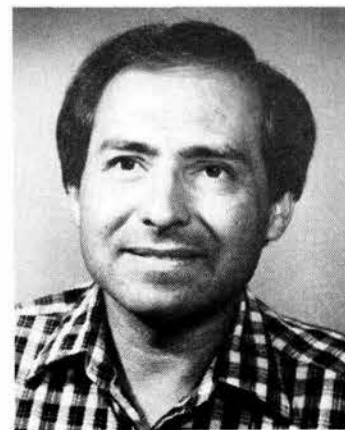
David Ryerson (5144) 20



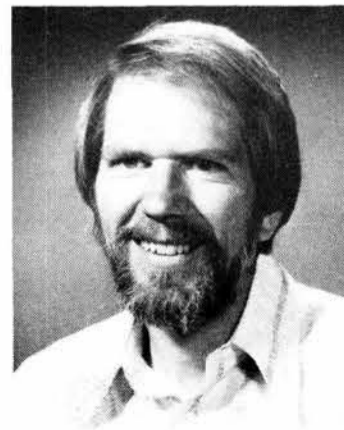
Basil Steele (5249) 10



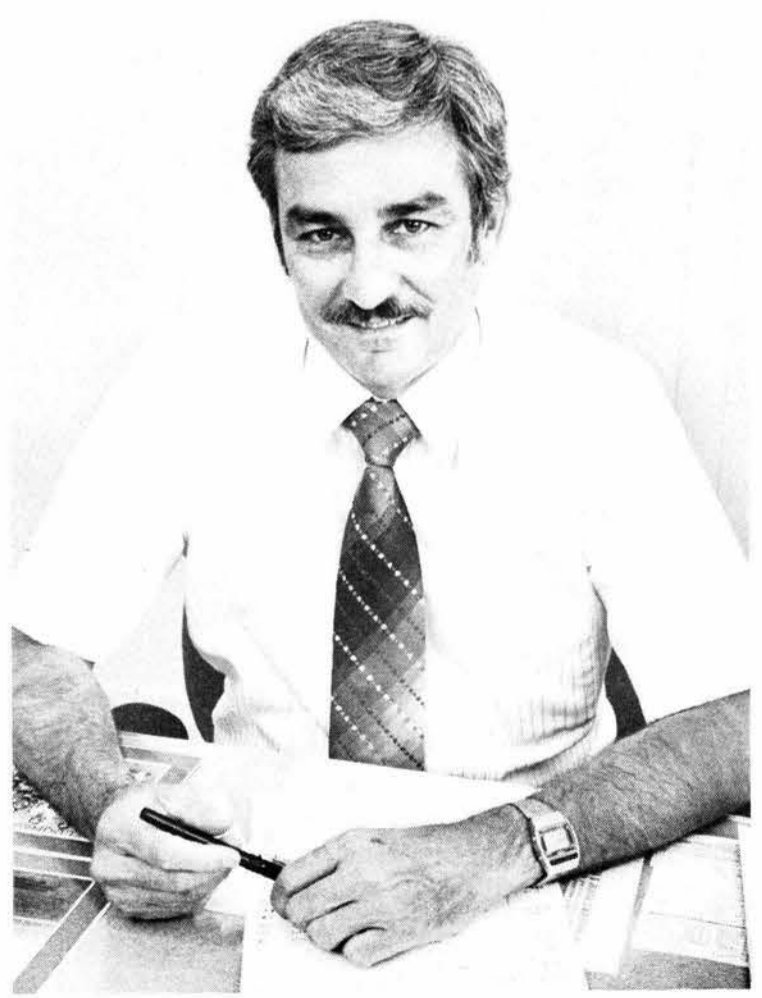
Johnny Allen (8262) 20



Hank Ortega (3423) 15



Wayne Sundberg (6425) 20



Tom Workman (2360) 25

**Deadline: Friday noon before week of publication unless changed by holiday. Mail to: Div. 3162.**

**Ad Rules**

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8 1/2 by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per issue per category.
8. No more than two insertions of same ad.
9. No "For Rent" ads except for employees on temporary assignments.
10. No commercial ads.
11. For active and retired Sandians and DOE employees only.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

**MISCELLANEOUS**

FOUR 13" used tires, \$10; Tappan 1.2 cu. ft. countertop microwave, \$200. Baca, 265-2881.

20" SEARS bike, \$40; steel single pedestal desk, \$35; kingsize headboard, \$20; computer table, \$20. Phipps, 299-3151.

WATERBED, complete w/ bumpers, sheets, quilt. Fraser, 892-8435.

CP/M COMPUTER, 256K memory, 8" disk drives, Heathkit H-29 terminal, serial ports, documentation, manuals, prints, \$1250. Hufnagel, 294-5949.

PUSH MOWER, Sears, \$155 new, \$60; metal trundle bed, \$100; Sandia gravity exerciser, \$325; Navajo rugs. Blackledge, 294-6030.

ALUMINUM Fishing boat, 14 ft., repainted, \$375. Martin, 869-2049.

DINETTE table, small w/leaf, formica top, 4 chairs w/chrome legs, \$45; large wheelbarrow, all steel w/rubber tires, \$55. Kindschi, 265-0531.

OLYMPUS OM-10 SLR camera, F 1.8, 50mm lens w/case, \$175; winch 12V, 1500 lbs. capacity, used few times, \$75. Revels, 344-3033.

BED, Simmons double mattress & box springs, firm, \$175; sofa, love seat, coffee & end tables, \$400 OBO. Clement, 299-1501.

HAM radio, Kenwood TS820S w/CW filter & remote VFO, contest proven, \$550. Draper, 821-5455.

TENT, 8'x10', Hillary (Sears), sleeps four adults, external frame, 6'6" center height, \$150 new, asking \$110. Schkade, 292-5126.

DOG house, medium size, \$25. Choate, 293-4304.

WICKER bassinette, \$28; two Sandia memory Gardens Cemetery lots price negotiable. Vandl, 255-0685.

3 PC corner group turns into 2 single beds, \$100; full size bed, box springs & mattress, \$350; double dresser, \$100; 2 glass top end tables, \$40. Baca, evenings & weekends, 883-1611.

RINGS, 3 pc. set, 11 diamonds, total 5/8 karat, center ring size 4 1/4, outer rings size 6, \$1200. McAlees, 821-7894.

SWIMMING pool, above ground, 16'x3' oval, take in exchange for paving the area. Cosden, 881-1412.

BROWNING 12 gauge Citori shot gun, Gd I injector chokes, 3 months old, \$550. Johnson, 884-1249.

5 PC wrought iron patio set, \$125; cosmetic bathroom mirror 32"x36" w/7"x36" sliding doors, \$39. Allen, 298-9833.

'84 CAR caddy for front or back wheel towing w/spare wheel and tire, \$1195. Mabery, 898-4125.

3 NEW Delmar soft light aluminized shades, inside mount, pale topaz, 46h x 70w, cost \$100 ea., sell \$50 ea. Strascina, 294-0305.

FLOWER girl's dress, rose-pink, size 8, pictured in current Penney's spring/summer catalog, page 204, \$20. Hoven, 293-0694.

WATERBED, super single w/padded rails, six drawers, bookcase headboard, mattress, liner & heater. Shortencarier, 292-3575.

WINDSURFER, free-style, 1984, mylar sail, sailbag, high wind dagger. Volk, mornings, 242-5438.

ALADDIN lamp plus oil, never used, \$30. Rowe, 881-6159.

DISHWASHER, waste king, portable or may be installed, butcher block top, \$75 OBO. Chirigos, 884-5686.

2 TRUCK tires, 10x15, wide, 6 ply w/ chrome wheels, \$15; rims different sizes, 3 used tires, white walls, P-195, 75, R-14, \$15 for all. Padilla, 877-2116.

AQUARIUM, 2-20 gal. high tanks, stand, filters, pumps, etc., \$40. Russell, 298-0162.

FRIGIDAIRE, 15 cu. ft., harvest gold, \$165; Teac 1230 reel-to-reel tape deck, \$175; 6' Norfolk Island pine, \$50. Feibelman, 242-1946.

JACOBSEN power lawn mower, light weight, new bag, \$75. Henderson, 884-8309.

DOG house for medium size dog, custom built, \$20. Stump, 344-9340.

BABY bed, Simmons, complete, dual drop rails, round corners, light color, hard wood, \$125. Whelan, 294-6016.

WINDSURFER I, Regatta board, \$450. Fitzgerald, 884-4607.

ENGLISH springer spaniel puppies, AKC, liver & white, champion bloodline, 8 wks. old, \$150. Westman, 881-0471.

AQUARIUM, 40 gal., complete w/stand, plants, filter, light, etc., \$75. Benecke, 255-1356.

PATIO table w/umbrella, \$45; electric sewing scissors, \$8; 2 pc. matching luggage, never used, \$22. Sublett, 884-4426.

AUTOMATIC pistol, .22 cal., high standard trophy model, 10-shot target weapon w/foam lined carrying case, \$260. Martegane, 884-4643.

AIR CONDITIONER, refrigerated, 220V, 3/4 ton, window unit, Sears brand, \$40. Norwood, 292-0072.

MINOLTA SRT-102 w/50mm f1.4 lens & Vivitar flash unit, \$90. Montry, 821-3758.

SLIDE-IN electric kitchen range w/oven, includes range vent, copper color, \$50. Smith, 281-2940.

GARAGE SALE 6/22-23/85, 6505 Ponderosa, N.E. Ahr, 883-0459.

TURQUOISE & silver watch band, man's, never worn, \$75 OMO. Hughes, 299-6674.

CHEST of drawers, all wood, painted white, 4-drawer, \$30. Quintana, after 6, 884-2210.

FREE to good home, two year old collie cross female, has been spayed & has all shots. James, 294-6837.

LIVING room sale, 11100 Gibson, S.E., #H-178, rocking chair, \$30; wood desk, \$50; much more, June 22, 10-4. Greer, 296-7310.

BELL & Howell 1615 movie projector, Super 8 and Bell & Howell 671/XL movie camera, \$150; Stenorette reel-to-reel, earphones and foot pedal included, \$100. Carlin, 292-5428.

MOVING sale: furniture; antiques; pool table & acc.; dishes; freezer; queen size bed; directors chairs; tools & more. Adams, 881-6836.

SEARS 17 cu. ft. refrigerator/freezer. Matthews, 869-2370.

SWING set w/slide, \$50; Mickey Mouse print curtain & curtain rod, \$5. Wilder, 299-6198.

DINING room table & 6 chairs, modern style Drexel, medium brown, includes 2 arm chairs and 2 12" leaves. Kepler, 298-5652.

TWO Garage sales: folding bed, clothing, books, bikes, etc., 9-4 June 21-22, 6100 & 6109 Ponderosa N.E. Schellenbaum, 881-7589.

AUDIO amp., Kenwood KA-8100, 75 watts/ch., integrated amp.; KLH-Burwen noise reduction unit. Ritchey, leave message, 268-7620.

SATELLITE receiver, SatCom R-5000 including down converter \$198. Mason, 299-2836.

SUNFISH sailboat, \$600; operational gas clothes dryer, \$75. Drayer, 821-4017.

D-41 Martin guitar w/ hard case, left handed, \$1400. Perryman, 281-3020.

R.V. owners membership in "Camp Coast to Coast" \$1 per night at over 350 parks. Rainhart, 821-3690.

LOVESEAT couch, Ethan Allen, early American style, nutmeg finish, brown upholstery, solid maple frame & trim, \$395. Fehl, 892-5967.

SLEEPER couch, \$40; four burner 33", electric stove top, \$15. Baack, 296-2312.

DRYER, electric, \$90; towbar for vehicle, \$75. Edwards, 291-9046.

USED furniture, loveseat, chairs & ottomans, corner hutch, rollaway bed & misc. Reich, 877-2846.

OAK parquet coffee table; small chest of drawers; Wilson golf clubs; zero clearance fireplace; 10 speed bicycle. Richards, 281-9471.

COMPLETE living room suite sofa in subdued print & three chairs — two gold, one green, little wear, \$200. McIlroy, 299-4977.

WALL HEATER, propane, 2-burner, thermostat-controlled, will deliver to Sandia, \$20. Hawkinson, 281-1281.

**Early Deadline**

The July 4 holiday means that the deadline for ads (or any other items) for the July 5 issue of LAB NEWS is noon on Thursday, June 28.

**TRANSPORTATION**

'74 CHEVY Impala, low mileage, PB, PS, AC, \$1650. Starcevic, 298-5132.

'84 TOYOTA Cressida station wagon, white/brown, less than 8K miles, still under warranty, all accessories standard. Fisher, 293-2864.

'77 JEEP CJ7, 60K miles, \$2300. Pastorek, 292-6323.

'79 MOTO GUZZI 1000, under 4K miles, asking \$3000. McKinney, 281-9289.

'79 HONDA motorcycle, CM400T, new tires, battery & brakes, \$500. Barr, 821-3825.

'83 HONDA shadow, 500cc, shaft drive, water cooled, recent tune-up, 10,300 miles, \$1425. Bishop, 299-8782.

'79 YAMAHA 650, 5,800 miles, full fairing, \$900 OBO. Marquez, after 5, 836-7115.

'79 FIAT Spyder, silver, convertible, black top, \$4300. Miera, 298-4260.

'77 HONDA Accord, 5-spd, AC, AM/FM, low miles, \$2500. Olson, 299-8678.

'83 MERCURY Lynx, 2-door, tan, 4-spd, AM/FM, cassette, 30,400 miles, \$3995. Gregory, 268-2022.

'73 MGB, fiberglass hardtop & tonneau covers. Byars, 294-6676.

'82 DATSUN 280ZX, PS, PB, PW, air, AM/FM, alloy wheels, leather seats, cruise control, bra, ski racks, car cover, \$10,500. Pafford, after 5, 298-8913.

'79 CHEVROLET, Monte Carlo, landau, PS, PB, PW, AC, CC, AM/FM, cassette, tilt wheel, new shocks, \$3800. Chavez, 836-2719.

'79 PINTO, 4-spd, air, radio. Gallegos, 293-2408.

'79 AUDI 5000, AC, AT, new tires, one owner, \$4500. Johnson, 884-8250.

'72 CHEVY Caprice, 4 door, PS, PB, AC, AM/FM, PW, p-seats, \$895. Padilla, 884-4913.

'75 MERCEDES Benz 300D, loaded, dark blue w/ivory interior, 161K miles, \$7000. Lucas, 344-7311.

'81 SUZUKI GS250, new tire & battery, 2K miles, \$600 OBO. Moya, 865-5765.

'69 FORD Mustang fastback, 250 6-cyl, 3-spd, manual trans., 89K miles, new upholstery & carpet, Michelin radials. Morrison, 299-4757.

'78 HONDA mini-trail, 70cc bike w/1800 miles, \$400. Brunner, 293-3035 or 296-6617.

'81 HONDA 100XL Enduro, low miles, \$450 OBO. Trump, 298-9558.

'81 DATSUN 210/HB, 5-spd, 32/45 mpg, RW shade Michelins, 43,500 miles, orig. owner, AM/FM, cassette, \$3795 OBO. Smith, 299-1981.

'83 HONDA 1100, V-65 Magna, asking \$2999. Ulibarri, 883-2848.

'75 FORD Pinto station wagon, 56K miles, new paint & Firestone radials, AM/FM, cassette, \$1200. Henderson, 884-8309.

'75 OLDSMOBILE Cutlass Supreme, 350 V8, AT, PS, PB, AC, AM/FM, landau top, tilt steering, swivel buckets, consider trade for Cougar or Mustang. Joseph, 293-1694.

'77 TOYOTA Celica, GT, 5-spd. cruise control, AC, AM/FM, cassette, new upholstery, \$2400. Gomez, 821-0685.

'79 IMPALA, 2 door, sport coupe, auto., PS, PB, AC, AM/FM, 350V8. Babb, 898-8591.

'81 KAWASAKI 440 LTD, includes extras, \$900. Garcia, 897-3112.

'79 HONDA CM-400T, 7K miles, kept in garage, windshield, crash bars, pegs & cruise control, \$875. Perryman, 281-3020.

'81 YZ80, been in storage 2 yrs., fresh bore & piston. Smith, 281-2940.

'80 CUTLASS Brougham, 4 door, V8, AC, PS, PB, AM/FM, cassette. Marshall, 298-4206.

'78 OLDS Cutlass, AC, radio, \$2800 OBO. Cook, 293-5747.

'71 VW camper, rebuilt engine, \$1500. Lennox, 821-0474.

'81 YAMAHA XS400 special, 9K miles, Quick Silver fairing, caseguards, new rear tire, luggage rack w/backrest, \$1000. Gilbride, 299-0870.

'64 OLDS, 2 door, 394 engine, AC, new upholstery & paint. Hill, 299-5272.

'73 FORD Ranchero, 302 V8, 3-spd., \$1200 OBO. Mooney, 281-2612.

'77 PLYMOUTH Volare, 2 doors, auto., AC, radio, V8, original owner, \$900 OBO. Shepherd, 299-4343.

'77 MERCURY Monarch, 2 door, V8, AT, PB, AC, one owner, 80K miles, \$1200. Salas, 299-8660.

'84 NISSAN 4x4 long bed truck, options include: heavy suspension & cooling, tow package, shell, 13K miles, \$9800. Barnes, 256-7444.

'65 COLLECTOR GTO body w/all parts acquired, \$400 OBO. Greer, 296-7310.

EX-CELL 11 1/2' camper, shower/toilet, stove w/oven, dbl. sink, 3-way refrigerator, furnace, hot water heater, queen size bed over cab. Beller, after 5, 881-4047.

27' WINNEBAGO motor home, 28K miles, Michelin tires w/spare, has trailer hitch, \$25,000. Mabery, 898-4125.

'72 CHEVROLET Blazer, 4WD, AC, PB, PS, \$2500; boy's 5-speed bike, \$50. Bushnell, 298-9631.

'82 BRONCO, fullsize 4x4, 302, 4-spd., AC, 40K miles; Gitane 10-spd bicycle, 24" tires. Richards, 281-9471.

4-BDRM, 3 bath Roberson, remodeled country kitchen, near Eastdale, make offer on financing, 3308 Aztec Ct. N.E. Gronewald, 884-2431.

OREGON building sites, panoramic view, green valley & mountain ranges, two 5 1/2 acre lots between Corvallis & Eugene. Orr, 344-5132.

6/10 ACRE lot at Pendaries, near golf course & fishing pond. Worden, 881-4486.

5 ACRES, South 14, 1/4 mile on Apple Valley road, across from Elks picnic grounds, \$9200/acre, terms. Crabtree, 281-5915.

COUNTRY living, lake view, 8 miles south of Truth or Consequences, 2-story home w/13 acres, reduced \$25,000, consider trade. Cordova, 884-9267.

3-BDRM, 1 1/2 bath, custom home, one year old, many energy saving upgrades, two story, priced below market. Gallegos, 293-2408.

WOODED acre lot in Forest Lakes, Colorado, near Vallecito Reservoir. Smith, 298-7365.

14x72 LANCER, 2-bdrm, 2 bath, fenced yard, set up in adult section of Shaw. Aydelotte, 867-4143.

2-BDRM house, Bel Aire section, large room attached, large yard, rear access, \$55,000. Neas, 293-3422.

'84 MOBILE home, Titan 24'x50', 3-bdrm, 2 bath, on foundation, 1/4 acres, N-217 & I-40, landscaping, \$55K. Lidyard, 281-1316.

TOWN house, 2-bdrm, 1 1/2 bath w/jacuzzi tub, assumable loan w/qualifying, 8.71%-11.15%, 4K down or make offer. Gronewald, after 5, 242-6072.

\$2000 equity assumable, \$222.40/mo., '79 Lamplighter mobile home 71'x14', 3-bdrm, 1 1/2 bath, 1 1/2 miles from Sandia. Greer, 296-7310.

1/2 ACRE, Los Lunas, custom home area. Cook, 869-6921.

5 1/2 ACRES Jemez Mtns., electricity, natural gas, pure spring water, national forest surrounding, pine & meadow, subdividable, \$45,000 OMO. Hughes, 299-6674.

4 ACRES, mtn. property off Frost Rd. on county gravel road, no mobile homes, \$25K, starting 6/24. Stephenson, after 5, 836-3135.

COLORADO mtn. home, one yr. old, 45 min. from Alamosa, Crestone Peak Base, 2-bdrm, 2 bath, fireplace, carpeted, furnished. Donham, 298-4044.

**WANTED**

POWER lawnmower, gas preferably. Nichols, 293-2631.

ONE Gemini Star 10X printer with or without Commodore interface cable. Bowland, 256-1861.

35MM slice magazines, Airequipt or Argus brand, holds 36 slides. Sherwood, 299-8146.

2 ROOMMATES for 3-bdrm, 3 bath solar house, must be nonsmoker & love animals, \$250 or \$300 + 1/2 utilities. Siegel, 822-8329.

BIRD cage, round, 24" tall, w/stand in reasonably good condition. Armijo, 345-7385.

GOLF clubs, men's right handed. Moore, 821-4431.

**WORK WANTED**

BABYSITTER. Baca, evenings, 298-7748.

NEED to move bedroom set from Albuquerque to Irving, Texas, will negotiate expenses. Myers, 265-7293.

CHILD 3-4 yrs. old to play w/my 3 yr. old daughter. Tramway/Comanche area, good references. Nicholls, 293-2631.

HOUSE sitter for mountain home, South 14 area, 20 miles from Sandia, mid-July to mid-August, garden, dog & cat. Lorenz, 281-9321.

**REAL ESTATE**

4-BDRM, Dennis Chavez School District, 1875 sq. ft., large great room, hobby room, \$95K. Mansure, 821-4898.

## Coronado Club Activities

# Poor Boys Play Tonight

TONIGHT the Isleta Poor Boys return to the Coronado Club bandstand to play their popular brand of country western music for dancing. In the dining room, the menu features your choice of two-for-one prime rib or poached halibut steak, two dinners for \$12.95.

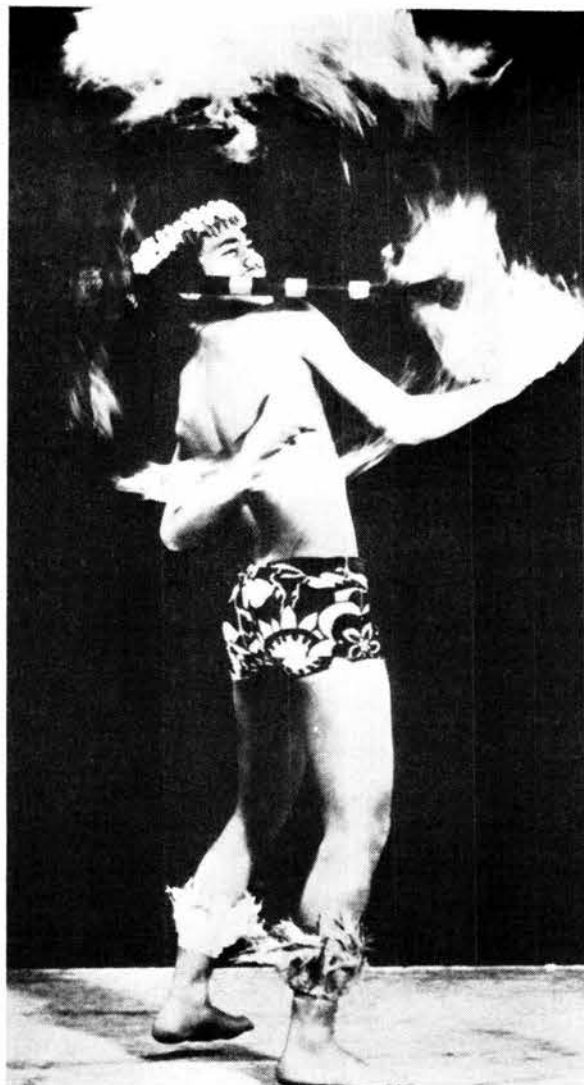
A TRAVEL PROGRAM on colorful New England is scheduled Monday, June 24, in the ballroom at 7:30 p.m. Charlie Clendenin (ret.) will host the meeting for Zia Travel.

The club office has information on upcoming Club-sponsored trips: Colorado, June 29-July 6, \$299; Gallup Ceremonial, Aug. 10, \$35; Hawaii, Sept. 14-20, \$510; and Canyon de Chelly, Oct. 20-21, \$90.

NEXT FRIDAY, June 28, sees a swinging variety group called South Side on the bandstand and another two-for-one special in the dining room — filet mignon or fried shrimp for \$12.95.

THE CLUB'S ANNUAL Fourth of July extravaganza will be a repeat of the successful formula that has carried the day these many years — it's an all-day affair starting at 11 a.m. in the pool and patio area with fun and games scheduled for both kids and adults — sack races, pole climbs, and diving contests. A luncheon buffet will be served from 11 to 4 with your choice of goodies from hot dogs to a barbecued chicken dinner. The Albuquerque Municipal Band will present a concert from noon until 2, then the Isleta Poor Boys play from 2 to 6. A beer truck and a portable bar will be in operation. Members with pool and patio tickets are admitted free; others pay \$1.

A WHOLE PORKER will be roasted on



the patio for the Club's annual Luau scheduled this year on Saturday, July 6. Other very good things planned for the Polynesian buffet include baked halibut, sweet and sour chicken, teriyaki beef, oriental vegetables, tropical fruit, and assorted other goodies. The Pearls of the Pacific show band and dance troupe will present another hula-hula spectacular, and the bar will feature some exotic tropical refreshments at special prices. Tickets are \$12.95, and reservations should be made right away — call 265-6791.

THE THUNDERBIRDS retiree group plans a dinner dance on Wednesday, July 10, starting with cocktails at 5:30 on the patio. Dinner is your choice of barbecued



THE PEARLS OF THE PACIFIC entertainment troupe scheduled for the Club's annual Luau July 6 features hula dancers, flame dancers, specialty acts, comedy, and music for dancing. The Polynesian dinner menu is also spectacular; it includes a whole porker roasted on the patio. Call 265-6791 for reservations.

chicken or beef at \$5.25. Bob Banks and Trio play for dancing from 7:30 until 10:30. Reservations are required; call 265-6791.

## Sympathy

To Mary Rodriguez (3422) on the death of her grandfather, May 27.

To Steve Lucero (7818) on the death of his brother in Albuquerque, June 2.

To Dolores Pacheco (6228) on the death of her grandfather in Espanola, June 6.

To Mary (22-2) and Bob (7234) Courtney on the death of Mary's father in Belen, June 13.

To Lonnie Foster (3436) on the death of his brother in Albuquerque, June 12.

## Fun & Games

**Tennis** — The Sandia Tennis Association had 54 participants in its first tournament of the year, played last month on the Coronado Club courts. Bruce Solberg (son of Jim, 7555) took first place in the men's singles. Women's singles championship went to Shannon Longmire (daughter of Paul, 5126); runnerup was Judy Hansen (5163). Ken Hanks (1201) and Mary McWherter (1636) won the mixed doubles competition with second place going to Cathy and Paul Peercy (1110).

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**Golf** — Winners of the recent SGA Socorro Open two-man best-ball tournament were Ned Underhill (3731) and Jerry Etter (1622), A flight; Danny Thomas (2314) and Doug Clark (2313), B flight; Goldie Lane (ret.) and Lou Aragon (ret.) C flight; and Donald Wrobel (1111) and Donald Overmyer (1151), D flight.

Winners of the SGA Fred Given Memorial tourney were (low net listed first, then low gross) Leon Chapman (6432) and Gerry Smith (2561), 1st flight; Lewis Fjelseth (7232) and Charleton Palmer

(3551), 2nd flight; Emery Chavez (155) and Marco Holloway (7818), 3rd flight; and Floyd Salas (5343) and Manny Chavez (5232), 4th flight.

The next event for the group is the SGA Open scheduled July 13-14 at the UNM South course and Ladera.

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**Hilton Open** — Scott Sanders, summer hire on the LAB NEWS staff, recently took top spot in the "Dynalectron Flight" (13-14 handicap), part of the Conrad Hilton Open Golf Tournament played in Socorro June 6-8. Scott shot a 7-under-par 209 net for his 54-hole total, good for both a trophy and a check.

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**Soccer** — The Misfits, sponsored by the Sandia recreation program, have been upgraded recently from third to second division in the Albuquerque Soccer League. The team could use a few more players, particularly a goalie. Anyone interested in trying out should contact Ricardo Beraun (6332), 6-8508.

## Welcome

### Albuquerque

Michael Jones (7864)

### Arizona

Andrew Estrada (2345)

Daniel Ong (5343)

Mark Stavig (1542)

### Kansas

David Kitterman (7263)

### Louisiana

Anita Schreiber (2313)

### Missouri

Wendy Noll (2313)

### New Mexico

William Chambers (1821)

Randy Longenbaugh (6322)

David Strong (322)

### Pennsylvania

Wade Romberger (7832)

### Texas

Gerald Grafe (2336)

Thomas Laub (6311)

William Tedeschi (1652)

Bertice Tise (2533)

Homer Willess (7832)